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Sensitive Plant Conservation Module for the Timberland Planning Component

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Northern California - North Coast Region
Interior Timberland Planning Team

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Resource Issue

Due in part to diverse climate, topography, and geology, approximately 290 sensitive[1] plants are known to occur in the interior six counties of the Northern California-North Coast Region (NC-NCR). The majority of these taxa occur within or adjacent to forested habitats. Because of this distribution pattern, many of the sensitive plants in the NC-NCR are potentially subject to disturbances associated with timber harvesting.

Most timber operations (i.e., timber falling, yarding, and site preparation) result in the modification of forested habitats. Timber operations may also modify adjacent or nearby non-forested habitats. This habitat modification may affect plant populations and their habitats either directly (via crushing, burying, burning, seed scarification, etc.) or indirectly (via modification of abiotic conditions such as light availability, relative humidity, and soil parameters, or via modification of biotic elements including mycorrhizal fungi, pollinators, pathogens, and competitors). These effects may be either detrimental or beneficial - the outcome depends on the ecology of the affected plants and the type, magnitude, and timing of the timber operation. Some intensive ground-disturbing operations (i.e., road and landing construction) essentially destroy plant habitats, and generally adversely affect sensitive plant populations (though

[1] As used in this document, the term "sensitive" denotes plant taxa that are 1) currently listed pursuant to the Federal Endangered Species Act, California Endangered Species Act, or Native Plant Protection Act, or 2) meet the definition of rare or endangered provided in §15380 (b) of the Guidelines for the California Environmental Quality Act.

roadcuts and landing edges have been observed to provide habitat for some sensitive taxa).

Because of the limited range and distribution of these plants and their important contribution to the biological diversity of California, they are considered significant public trust resources. As such, adequate stewardship by commercial timberland owners requires that the effects of timber and other management operations upon these plants be considered and factored into land management decisions. The occurrences of (and suitable habitat for) sensitive plants which may be adversely affected by proposed operations should be sufficiently protected to maintain or restore sensitive plant populations within the managed timberlands of interior northern California.

Goal

- Ensure that sensitive plant populations and sensitive plant habitats are adequately managed and protected

Objectives

- Promote increased protection and conservation of sensitive plants while streamlining the Timber Harvesting Plan (THP) review process
- Promote and contribute to the development of programmatic sensitive plant conservation plans by the major industrial timberland owners in the NC-NCR
- Develop Interior Timberland Planning Team's (Team) sensitive plant database of information on the response of each plant to various management operations, so that DFG can better function in the role of trustee agency and expert consultant to timberland owners

Strategic Plan

Programmatic sensitive plant conservation plans could be developed by industrial landowners either 1) in direct conjunction with the Team, or 2) by landowner staff or consultants with review, comment, and eventual concurrence by the Team. Because the protection measures included in plans will essentially represent "preconsultations" for particular plant taxa, Team acceptance of the final plans is critical in order to streamline the review process. Programmatic plans will enable companies to identify botanical resource issues and their possible solutions before or early in the THP planning process, such that THP review process should function smoothly and have few "surprises" that result in necessary modifications to planned harvests

While the specifics of conservation plans may vary with differing landowners due to ownership patterns, silvicultural practices, company resources, and other factors, all plans should include certain components:

- a list of sensitive plants known from or thought to potentially occur on company lands

- a summary of the ecological characteristics of each plant and the habitats from which it is known or suspected to occur
- a specific management prescription for treating known (or assumed to be present) populations
- flexibility in order to allow innovative measures aimed at adequate plant protection

Additional components might include:
- an analysis of the known (or estimated) response of each plant to the timber operations potentially occurring in its habitat
- general (not project-specific) surveys on company lands (performed by company, Team, or jointly) aimed at detecting and describing additional sites of sensitive plants
- development of ownership-wide sensitive species field guides to promote knowledge and awareness among company staff
- development of sensitive plant training and education programs for company foresters, biologists, and other field staff
- development of company or joint long-term research and monitoring projects to determine the effects of timber operations and/or the status of specific rare plant populations over time

In order to maximize resource benefits, the Team should focus its efforts to develop programmatic plant conservation strategies on the largest timber companies in the NC-NCR. These companies collectively manage approximately 87% of the industrial timberlands (and approximately 69% of all private timberlands) in the NC-NCR. If necessary, Team efforts should be prioritized among these companies based on:
- Ownership size
- Plant resources at risk
- Company interest in programmatic approaches to plant conservation

To include all available information in decisions and to maximize efficiency, the Team should encourage companies to cooperatively develop management recommendations for specific plants, especially where companies “share” habitat for particular plants. To this end, the Team can encourage and/or organize the creation of inter-company working groups to address wide-ranging plants or suites of plants.

Concurrent with encouraging and helping companies to develop programmatic plans, Team staff should continue development of in-house information on sensitive plants. The Team should continue its coordination with private landowners, the U.S. Forest Service, the Bureau of Land Management, and others to build its sensitive plant management database, photo library, herbarium, and general files. Elements critical to the database include information about each plant’s status, distribution, ecology, and response to timber operations and other management activities. The database program itself should be refined and made more user friendly so that it eventually contains links to information about a plant’s legal status, habitat and ecology, distribution information and maps, impacts from timber operations, management recommendations, references,

and photographs. Eventually the database could be posted on the Internet, allowing foresters and others instant access to current information on sensitive plants.

Monitoring

Monitoring will be an important component of programmatic sensitive plant conservation strategies. When programmatic plant conservation plans are accepted and implemented, pre-harvest review of THPs for potential impacts to sensitive plant resources will primarily become an implementation monitoring process. Team staff will review THPs to ensure that sensitive plant habitats and occurrences are adequately described and evaluated, and that, when appropriate, the proper protection measures are included for sensitive plants. Monitoring by the Team will also include active- and post-harvest inspections, and might include both implementation monitoring and effectiveness monitoring. Implementation monitoring in the field is essential, as it will determine whether companies are actually implementing the protection measures specified in the THPs. Effectiveness monitoring is likewise important to determine the efficacy of the prescribed protection measures. It would be beneficial for the Team to conduct effectiveness monitoring with timber company staff so that the efficacy of various protection measures can be jointly evaluated and agreed upon.

Adaptive Management

Adaptive management is likely to be critical to the success of programmatic approaches to sensitive plant protection. In general, little is known about the responses of most sensitive plants to specific timber operations (very little experimental work has been conducted and anecdotal evidence on plant response is generally limited). Because of this, management recommendations initially developed for many plants may eventually be determined either to result in insufficient protection or in more protection than is necessary.

Results of effectiveness monitoring should be evaluated and, if necessary, incorporated into revised management recommendations for each plant. When appropriate and feasible, well-planned experiments which are designed to document the effects of specific operations upon whole or partial populations should be jointly-developed. The results of these experiments will provide both the Team and timberland owners with a better understanding of the responses of specific plants, such that future management recommendations will be better informed.

Rare plant conservation plans should be considered “living documents” and the protection measures for specific plants should be designed with the flexibility of being updated via joint agreement whenever new data becomes available. Additionally, Team reviews of the entire plant conservation plans should be scheduled every five years. These regular reviews will permit incorporation of necessary revisions to the entire plan or process, and will ensure that all appropriate updates to the protection measures for specific plants are actually included.

Measures of Success

Success will be measured by the extent to which the following are met:

- Development of programmatic plans/agreements with each of the timber companies in the NC-NCR
- Implementation of those plans via protection measures regularly included, when appropriate, with the first submittal of THPs and implemented during timber operations
- Frequency of joint (company and Team) active- and post-harvest monitoring aimed specifically at detecting the implementation and effectiveness of programmatic protection measures
- Establishment of joint experiments to determine the response of sensitive plants to specific timber operations
- Demonstration of the effectiveness of the developed protection measures in protecting sensitive plant populations
- Completeness/effectiveness of the Team's sensitive plant database